

What is claimed is:

1. A tire/wheel assembly comprising:

a wheel having a rim;

a pneumatic tire mounted on the rim of the wheel, the pneumatic tire having a cavity; and

a noise reduction interior member disposed in the cavity of the pneumatic tire, the noise reduction interior member having left and right elastic rings fitted to the rim and an annular body attached between the elastic rings,

wherein the annular body is configured such that an annular cavity portion surrounded by the noise reduction interior member and the pneumatic tire has a cross-sectional area that varies in a circumferential direction of the tire.

2. A tire/wheel assembly according to claim 1, wherein the cross-sectional area of the annular cavity portion varies in such a manner that a maximum cross-sectional area thereof is 2% greater or more than a minimum cross-sectional area thereof.

3. A tire/wheel assembly according to claim 1 or 2, wherein the cross-sectional area of the annular cavity portion varies periodically.

4. A tire/wheel assembly according to claim 1, 2 or 3, wherein the annular body has a cross-sectional shape which varies in the tire circumferential direction.

5. A tire/wheel assembly according to claim 1, 2, 3 or 4, wherein the annular body is formed by jointing a plurality of annular

body pieces into which the annular body is divided in a circumferential direction thereof.

6. A tire/wheel assembly comprising:

a wheel having a rim;

a pneumatic tire mounted on the rim of the wheel, the pneumatic tire having a cavity; and

a noise reduction interior member disposed in the cavity of the pneumatic tire in such a manner that the noise reduction interior member divides the cavity of the pneumatic tire into an inner cavity part and an outer cavity part, the noise reduction interior member having left and right elastic rings fitted to the rim and an annular body attached between the elastic rings,

wherein the annular body has a plurality of openings through which the inner cavity part and outer cavity part are communicatively connected, the annular body having regions equally sectioned in a circumferential direction thereof, the plurality of openings being unevenly distributed in such a manner that the regions have openings which are different in total opening area.

7. A tire/wheel assembly according to claim 6, wherein the equally sectioned regions include a region having openings that are maximum in total opening area and a region having openings that are minimum in total opening area, the region having openings that are maximum is 5% to 10% greater in total opening

area than the region having openings that are minimum.

8. A tire/wheel assembly according to claim 6 or 7, wherein the equally sectioned regions consists of two to seven regions into which the annular body is equally sectioned in the circumferential direction thereof.

9. A tire/wheel assembly according to claim 8, wherein the equally sectioned regions consists of four regions into which the annular body is equally sectioned in the circumferential direction thereof, the four equally sectioned regions consisting of regions having openings that are maximum in total opening area and regions having openings that are minimum in total opening area, which are alternately placed.

10. A tire/wheel assembly according to claim 6, 7, 8 or 9, wherein the openings have opening lengths of 3 mm to 6 mm.

11. A tire/wheel assembly according to claim 6, 7, 8, 9 or 10, wherein the annular body has an outer surface, an entire opening area of all the openings on the outer surface of the annular body being 0.3% to 6.0% with respect to an area of the outer surface of the annular body.

12. A noise reduction interior member which is to be disposed in a cavity of a pneumatic tire mounted on a rim of a wheel, comprising:

left and right elastic rings fitted to the rim; and  
an annular body attached between the elastic rings,  
wherein the annular body is configured such that an annular

cavity portion surrounded by the noise reduction interior member and the pneumatic tire has a cross-sectional area that varies in a circumferential direction of the tire.

13. A noise reduction interior member according to claim 12, wherein the cross-sectional area of the annular cavity portion varies in such a manner that a maximum cross-sectional area thereof is 2% greater or more than a minimum cross-sectional area thereof.

14. A noise reduction interior member according to claim 12 or 13, wherein the cross-sectional area of the annular cavity portion varies periodically.

15. A noise reduction interior member according to claim 12, 13 or 14, wherein the annular body has a cross-sectional shape which varies in a circumferential direction thereof.

16. A noise reduction interior member according to claim 12, 13 or 14, wherein the annular body is formed by jointing a plurality of annular body pieces into which the annular body is divided in a circumferential direction thereof.

17. A noise reduction interior member which is to be disposed in a cavity of a pneumatic tire mounted on a rim of a wheel, comprising:

left and right elastic rings fitted to the rim; and  
an annular body attached between the elastic rings,

wherein the annular body has a plurality of openings, the annular body having regions equally sectioned in a

circumferential direction thereof, the plurality of openings being unevenly distributed in such a manner that the regions have openings which are different in total opening area.

18. A noise reduction interior member according to claim 17, wherein the equally sectioned regions include a region having openings that are maximum in total opening area and a region having openings that are minimum in total opening area, the region having openings that are maximum is 5% to 10% greater in total opening area than the region having openings that are minimum.

19. A noise reduction interior member according to claim 17 or 18, wherein the equally divided regions consists of two to seven regions into which the annular body is equally divided in the circumferential direction thereof.

20. A noise reduction interior member according to claim 19, wherein the equally divided regions consists of four regions into which the annular body is equally divided in the circumferential direction thereof, the four equally divided regions consisting of regions having openings that are maximum in total opening area and regions having openings that are minimum in total opening area, which are alternately placed.

21. A noise reduction interior member according to claim 17, 18, 19 or 20, wherein the openings have opening lengths of 3 mm to 6 mm.

22. A noise reduction interior member according to claim 17,

18, 19, 20 or 21, wherein the annular body has an outer surface, an entire opening area of all the openings on the outer surface of the annular body being 0.3% to 6.0% with respect to an area of the outer surface of the annular body.